



Seminar

## K-Theory, Quadratic Forms and Number Theory

**Title:** Cohomology of some arithmetic groups

**Speaker:** Professor Graham Ellis (NUI Galway)

**Date:** Thu 20th October 2011 at 4:00PM

**Location:** Mathematical Sciences Seminar Room (Ag 1.01)

**Abstract:** The talk will begin with basic details on group cohomology and then explain how computer calculations of perfect forms, convex polytopes and Smith Normal Forms of sparse integer matrices can be used to obtain the low dimensional cohomology of some arithmetic groups such as  $SL(4, \mathbb{Z})$  and  $SL(n, \mathcal{O})$  for other rings of integers  $\mathcal{O}$  and small values of  $n$ . This cohomology is related to conjectures of Avner Ash about Hecke operators and Galois theory.